

What Is Claimed Is:

- 1 1. A system for optical storage device speed error
2 compensation, comprising:
 - 3 a circuit for receiving an speed error signal and outputting
4 a first tracking control effort signal;
 - 5 a feedforward controller for receiving the speed error
6 signal and generating a second tracking control effort
7 signal according to a DC steady state error in the
8 speed error signal;
 - 9 an optical head module for moving at an actual speed
10 determined by the total of the first tracking control
11 effort signal and the second tracking control effort
12 signal;
 - 13 a gain controller for generating a feedback speed signal
14 according to the actual speed of the optical head
15 module; and
 - 16 a comparison device subtracting the feedback speed signal
17 from a predetermined speed signal to generate the
18 speed error signal.
- 1 2. The system as claimed in claim 1, wherein the circuit
2 comprises a microprocessor generating a calculated result
3 according to the speed error signal, and a feedback controller
4 receiving the calculated result and outputs the first tracking
5 control effort signal.
- 1 3. The system as claimed in claim 1, wherein the
2 feedforward controller continuously generates the second
3 tracking control effort signal to adjust the DC steady state error
4 to a normal value.

1 4. The system as claimed in claim 1, wherein the
2 feedforward controller and the feedback controller are
3 implemented by using a firmware programming a control chip.

1 5. The system as claimed in claim 1, wherein the optical
2 head module is inclined orientation.

1 6. The system as claimed in claim 1, wherein a measurement
2 device detects the actual speed and outputs the actual speed
3 signal to the gain controller.

1 7. The system as claimed in claim 1, wherein the first
2 tracking control effort signal and the second speed control
3 signal are voltage signals.

1 8. A method for speed error compensation, comprising the
2 steps of:

3 detecting an actual speed of an optical head module and
4 outputting an actual speed signal;
5 obtaining a feedback speed signal by gaining the actual
6 speed signal;
7 generating a speed error signal by subtracting the feedback
8 speed signal from a predetermined speed signal;
9 calculating the speed error signal and outputting a first
10 tracking control effort signal;
11 calculating a DC steady state error in the speed error signal
12 and outputting a second tracking control effort
13 signal; and
14 adjusting the actual speed of the optical head module
15 according to the total of the first tracking control

16 effort signal and the second tracking control effort
17 signal;
18 wherein the second tracking control effort signal is
19 continuously generated until the DC steady state error
20 reaches a normal value.

1 9. The method as claimed in claim 8, wherein when the speed
2 error signal is positive and the DC steady state error exceeds
3 the normal value, the total of the first tracking control effort
4 signal and the second tracking control effort signal increases
5 the actual speed of the optical head module.

1 10. The method as claimed in claim 8, wherein when the speed
2 error signal is positive and the DC steady state error is lower
3 than the normal value, the total of the first tracking control
4 effort signal and the second tracking control effort signal
5 decreases the actual speed of the optical head module.

1 11. The method as claimed in claim 8, wherein when the speed
2 error signal is negative and the DC steady state error exceeds
3 the normal value, the total of the first tracking control effort
4 signal and the second tracking control effort signal decreases
5 the actual speed of the optical head module.

1 12. The method as claimed in claim 8, wherein when the speed
2 error signal is negative and the DC steady state error is lower
3 than the normal value, the total of the first tracking control
4 effort signal and the second tracking control effort signal
5 increases the actual speed of the optical head module.